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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,461	10/14/2003	James H. Beech JR.	2002B165A	7795

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EXAMINER	
BULLOCK, IN SUK C	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/686,461	BEECH ET AL.	
	Examiner	Art Unit	
	In Suk Bullock	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-93* is/are pending in the application.

4a) Of the above claim(s) *78-89 and 93* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-77 and 90-92* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-93* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/14/03 & 8/6/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-77 & 90-92, drawn to a process for removing metalloaluminophosphate molecular sieve contaminants from an oxygenate feed and converting the oxygenate to olefin, classified in class 585, subclass 638.

II. Claims 78-89 & 93, drawn to a process for shipping methanol and converting the methanol to olefin, classified in class 114, subclass 74.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation, different functions, and different effects.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Frank Reid on December 16, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-77 & 90-92. Affirmation of this election must be made by applicant in replying

to this Office action. Claims 78-89 & 93 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Vora et al. (5,714,662).

The Vora et al. reference teaches that it is conventional in the oxygenate to olefin conversion art to purify methanol prior to introducing the methanol to the conversion reactor. Crude methanol is processed in a multi column system which includes a topping column to remove light ends such as ethers, ketones, and aldehydes, and dissolved gases such as hydrogen, methane, carbon oxide, and nitrogen. Final separation is conducted in a refining zone employing a large number of distillation stages. See col. 2, lines 8-28.

It is noted that the oxygenate conversion process of Vora employs crude methanol and does not require refining the methanol. Vora is cited to show that refining crude methanol is known and conventional in the art. Although Vora does not disclose that the crude methanol is heated to form a vapor stream and a liquid stream, the conventional distillation process disclosed by Vora would inherently produce vapor and liquid streams. Thus, Vora is deemed to anticipate claims 1, 6, and 24.

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Janda et al. (6,486,219).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Janda discloses a method for producing methanol from a natural gas (Abstract). The methanol so produced is purified prior to passing it to a MTO conversion reactor. In the methanol purification unit most of water, methanol, and reaction by-products such

as ethers, other alcohol, aldehydes, ketones, etc., are removed in the condensate phase and fed to a three-column distillation train. See col. 12, lines 39-57.

Although Janda does not disclose that the crude methanol is heated to form a vapor stream and a liquid stream, the distillation process disclosed by Janda would inherently produce vapor and liquid streams. Thus, Janda is deemed to anticipate claims 1, 6, and 24.

Claims 1, 6, 11, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Lumgair, Jr. et al. (6,846,966).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The Lumgair, Jr. et al. reference discloses a process for converting an oxygenate feed such as methanol to olefins in the presence of a molecular sieve catalyst. More specifically, the reference discloses a feed vaporization process for oxygenate to olefin conversion which uses a vapor-liquid disengaging drum to separate non-volatiles and/or partial non-volatiles from volatiles in the oxygenate feed and produce a vaporized effluent that is reduced in non-volatiles and/or partial non-volatiles as a feed for oxygenate to olefin conversion (Abstract). The non-volatiles and partially

non-volatiles mostly remain in the liquid concentrating to a level determined by the concentration of non-volatiles and partially non-volatiles in the feed and the percent by weight of the total feed withdrawn from the drum as liquid blowdown (col. 32, lines 23-56). Non-volatiles are defined as materials that have negligible vapor pressure at the conditions necessary to prepare feed for oxygenates to olefin conversion process. The reference further teaches that non-volatiles can be introduced from residual materials present in logistics systems such as ships, tanks, and pipelines employed in the storage and transportation of the feed, as well as during recycling of oxygenate streams to a reactor. Non-volatile materials include organic metals, salts, acids and bases, dirt, clay, sand and mixtures and alloys of inorganic materials, e.g., catalyst fines. Examples of non-volatile organic compounds include asphaltenes, polymers, tars, coal, waxes, heavy oils, silicone oils and silicon polymers. See col. 2, lines 1-11 and col. 30, line 25 to col. 31, line 24.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2-5, 7-10, 12-23, 25-77 and 90-92 are rejected under 35 U.S.C. 103(a) as being obvious over Lumgair, Jr. et al. (6,846,966).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and

reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

The Lumgair, Jr. et al. reference discloses a process for converting an oxygenate feed such as methanol to olefins in the presence of a molecular sieve catalyst. More specifically, the reference discloses a feed vaporization process for oxygenate to olefin conversion which uses a vapor-liquid disengaging drum to separate non-volatiles and/or partial non-volatiles from volatiles in the oxygenate feed and produce a vaporized effluent that is reduced in non-volatiles and/or partial non-volatiles as a feed for oxygenate to olefin conversion (Abstract). The non-volatiles and partially non-volatiles mostly remain in the liquid concentrating to a level determined by the concentration of non-volatiles and partially non-volatiles in the feed and the percent by weight of the total feed withdrawn from the drum as liquid blowdown (col. 32, lines 23-56). Non-volatiles are defined as materials that have negligible vapor pressure at the conditions necessary to prepare feed for oxygenates to olefin conversion process. The reference further teaches that non-volatiles can be introduced from residual materials present in logistics systems such as ships, tanks, and pipelines employed in the storage and transportation of the feed, as well as during recycling of oxygenate streams to a reactor. Non-volatile materials include organic metals, salts, acids and bases, dirt, clay, sand and mixtures and alloys of inorganic materials, e.g., catalyst fines. Examples of

non-volatile organic compounds include asphaltenes, polymers, tars, coal, waxes, heavy oils, silicone oils and silicon polymers. See col. 2, lines 1-11 and col. 30, line 25 to col. 31, line 24.

The difference between Lumgair, Jr. et al. and the claimed invention is that the reference is silent with respect to the amount of methanol contained in the vapor stream.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Lumgair, Jr. et al. by determining the amount of methanol contained in the separated vapor stream because Lumgair, Jr. et al. has disclosed the level of contaminants in the feedstream is desirably less than 10 wt % and it is within the level of a skilled artisan to determine the optimum process conditions to achieve the desired level of contaminants in the feedstream while obtaining maximum amount of methanol in the vapor feedstream for conversion to olefin product.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,846,966. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are each directed to vaporizing an oxygenate feed comprising heating the oxygenate feed to form a vaporized oxygenate-containing stream and a liquid oxygenate-containing stream further comprising at least partial non-volatiles.

The difference between the present claimed application and the Patent '966 is that the Patent '966 includes additional steps. However, claim 1 in the present application does not exclude the additional steps recited in claim 1 of Patent '966.

Claims 1, 6, 11, 24, 28, and 40 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 25, 28, and 48 of copending Application No. 10/865,281. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are each directed to vaporizing an oxygenate feed comprising heating the oxygenate feed to form a vapor stream containing a majority of oxygenates in the feed and a liquid stream

containing a majority of molecular sieve catalyst contaminants, e.g. partial non-volatiles. The steps recited in the present application are encompassed in the copending Application '281.

This is a provisional obviousness-type double patenting rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to In Suk Bullock whose telephone number is 571-272-5954. The examiner can normally be reached on Monday - Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I.B.

Walter D. Griffin
Primary Examiner